

# DELAY CIRCUITS AND RELATED APPARATUS FOR EXTENDING DELAY TIME BY ACTIVE FEEDBACK ELEMENTS

## Abstract

A delay circuit and related apparatus for providing a longer delay time, such that when a level of an input signal changes, a level of an output signal changes accordingly after the predetermined delay time. The delay circuit has a storage unit, a current generator, a voltage generator for providing a reference voltage, a differential amplifier, and a feedback control module. The current generator starts to provide a charging current to the storage unit when the input signal changes level, such that an output charging voltage of the storage unit is gradually charged to reach the reference voltage. The feedback control module is capable of dynamically decreasing the charging current provided to the storage unit as the charging voltage is approaching the reference voltage, and the amplifier will change the level of the output voltage when the charging voltage reaches the reference voltage.